

## ABSTRACT

"An illuminator and production method"

- 5 An illuminator (1) has an array of cavities (3) are drilled in a substrate having an FR4 electrically insulating body (7) plated with copper conductors (6(a), 6(b)). Further patterning of the substrate provided electrical conductors (3(b)) in the cavities to act as both part of the light drive circuit and reflectors in the cavities. The drilling is performed to the full depth of the FR4 body (7) until underneath
- 10 plating (6(b)) is reached. A further Cu plating (4(b)) is applied on the platings (6(b)) so that they together form a heat spreader under each cavity (3). A layer (8) of resin incorporating thermally conductive particles is bonded to the underside surfaces, both of the FR4 (7) and of the platings (4(b)). A heat sink (9) is bonded to the layer (8). Good optical efficiency and thermal dissipation is
- 15 achieved, despite the fact that conventional PCT processing techniques are used.